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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

(FOUO 13/79)

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EAST EUROPE REPORT

ECONOMIC AND INDUSTRIAL AFFAIRS

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INTERNATIONAL AFFAIRS

INVESTMENT CREDITS AMONG SOCIALIST COUNTRIES DISCUSSED

[Article by Vladimir Jarkovsky: "The Economic Efficiency of Investment Credits Among Socialist States"]

[Text] Recently it has been coming ever more clearly to light that the further development of cooperation in certain branches will require, within the framework of socialist economic integration, a concentration of resources in the building of important structures, especially for the securing of sources of raw materials. The form of international investment credits is considered the most advantageous form. The complicated problem of their efficiency is the center of interest of economic theory in all socialist states. It is being reviewed from many viewpoints and the depth of these treatments varies. Some authors formulate directly a model for the calculation of economic efficiency; others remain with their considerations in the area of verbal formulations.

Most authors consider international investment credits within the framework of socialist economic integration as a component of a complex of activities oriented toward specialization, cooperation and the division of labor, and condition their efficiency on the efficiency of the structure of mutual economic relations. As a representative of this direction we may consider J. F. Kormnov, who emphasizes the role of profit and the utilization of the price functions of world markets and concludes with international socialist khozraschet as a planned method of the realization of the external economic relations of socialist countries.[1] His views are very stimulating. Theory and practice will, clearly, return to him for a long time.

Another group is formed by authors who view the problem of international investment credits solely from the viewpoint of the investing (i.e., debtor) states. They perceive in them an important direction of international economic and scientific technical cooperation, which is creating the conditions for the wide application of the results of the scientific technical revolution, for the growth of the economic potential and raising the efficiency of social labor. International investment credits should, according to them, serve the establishment and development of sophisticated,

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investment-intensive products with a large volume of manufactured production and mutual exchange. They hold that these are often a necessary condition for the activity of individual economic complexes and have an influence on investment policy, on the structure and efficiency of production and on the character and efficiency of foreign economic relations. Because the acceptance of credited resources for the financing of construction does not coincide, temporarily, with repayment, the debtor countries are able to make a profit from the total volume of production factors, even though the financing of the construction was realized in part or wholly owing to the credit. For its use, interest is paid to the lending country. I Motorin is a representative of this group.[2]

Individual economists hold that in the building of structures with the use of credit from foreign countries, the category of investments disappears, because resources are not taken away from the production and economic circulation of the debtor country.[3] This is an extreme view, the correctness of which has been refuted.[2] Some authors proceed in the area of net income, some operate with transferred costs.[4]

Common to all of them is an underestimation of the reproduction process and a lack of understanding of the difference between the efficiency of the credit financing of investment construction and the efficiency of the investment itself. The author of this article has also made the same mistakes in the past in the solution of the problems of securing raw materials for the metallurgical industry.[5] Because the securing of raw materials for metallurgical plants is a matter of the development of the structure of our economy, it is necessary to be clear concerning the efficiency of this form of cooperation from the viewpoint of the production sphere. In this article, we shall summarize the most important results of research completed by the author in the past year. We shall begin from the concept of an international socialist investment credit as the transfer of an amount of funds, removed from the national circulation of one socialist country, for the use of another socialist country, with the condition of reciprocity. Under socialism, the goal of a credit relation is not the mere concentrated movement of value, but a flow of material goods, of usable value, which is accompanied by a corresponding movement of value. The credit form of economic relations is characterized by the ability to separate the movement of value from the movement of material substance in such a way that the movement of value can either precede the flow of material goods (in the granting of credit) or lag behind it (in the repayment of credit).

International socialist investment credit is a form of the movement of investment resources among the countries of the socialist community. It includes as a basic component an element of conscious proportionality, a planned character, complemented by an aspect of conscious internationalism and mutual advantage. (See note 7).

Forms of International Investment Credit

International investment credit within the framework of socialist economic integration is provided in two basic forms, as intergovernment credit and bank credit. Both forms differ as to relations and effects.

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An intergovernment investment credit presumes common economic and political intentions of two or several partners in the area of the development of mutual economic relations (deliveries, division of labor, specialization, cooperation). In these, it is a question of the contact of sovereign states with independently balancing every other enterprise. It is a matter of the cooperation of the partners that its operation be economically effective.

In the following text we shall analyze our conception in the case of inter-government credits.

The lending state includes in the amount of the credit, in addition to the cost of material and financial fulfillment involved in the providing of resources, also interest from the resources committed during the provision of credit and during the delay between the final fulfillment from its side and the start of the period of repayment. (Financial mathematics has the name intercalary interest for these interest payments.) These interest payments represent a component of the amount of credit, at least for the requirements of the calculation of economic efficiency. The method of its calculation is already well enough known from the principles of the Federal Ministry for Technical and Investment Development (FMTIR) for the determination of the economic efficiency of investments.[8] The lending state takes it into its calculations in a percentage rate corresponding to the desired rate of increase of basic funds and supplies.

This is not an interest rate stemming from the normative coefficient of the economic efficiency of investment, because only a portion of the achieved net income is invested and produces net income. The remaining portion covers the noninvestment needs of the khozraschet sphere and social expenditures (overhead expenses on a social scale, extraenterprise overhead costs). There-fore, the following relationship exists between the norm of economic efficiency and the interest rate corresponding to the desired rate of growth of basic funds and supplies:

$$k_d = P_a/P_{inv},$$

where k_d is the normative coefficient of economic efficiency,

P_a is the percentage of the desired interyearly growth of basic funds and supplies,

P_{inv} is the percentage allotted to investment needs from the realized net income.

From this $P_a = k_d P_{inv}$. (More detailed treatment in the author's criticism of transferred costs; see note 6).

In providing intergovernment credits, the form of goods is often utilized. We meet this in the most varied forms. These include deliveries of capacities, services and apparatus for a constructed factory from the design

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phase right up until its introduction into operation, in a varied range
from small deliveries right to the delivery of a whole factory with key.
The provision of resources can also consist of deliveries of the most
varied goods (even goods imported from foreign states), so that foreign
exchange resources may be freed up to the investors for the purchase of
machines, apparatus and licenses from third countries.

Partners can, at the same time, have differing conceptions of the sum of the
provided resources. This happens for various reasons, as, for example, due
to differing price relations, higher transport costs for delivered material
which must overcome great distances, higher incidental personal costs
(separation allowance, trips to the family, a longer paid vacation, etc) and
others.

The lending state evaluates the granted credit in terms of the real expended
social costs of the realized deliveries. This leads to an amount which we
will designate with the term "evidential (or reproductive) value of credit"
(K_e).

On the other hand, the investing state recognizes an amount based on the
approved project documentation, in which deliveries and services are evaluated
according to its own valid wholesale prices and imported apparatus and
licenses according to bids in the consideration of arriving leading world
manufacturers who guarantee an excellent technical level. This amount will
appear in our discussions under the designation "nominal value of credit"
K_{nom}).

The author has chosen the designations evidential and nominal value of credit,
because they describe the characteristic signs of the described quantities.
Evidential value does not appear in contract documentation. The lending
state takes due note of it however, works with it in its calculations of
economic efficiency and has an interest in its reproduction from the
advantages. The term nominal is justified, because nominal value appears
in the contract documentation. (The author does not insist on this
designation. If a better one be found, let it be used. It is a question
here for us only of a description of the phenomenon and not of new termin-
ology.)

Let us note that the difference in both levels consists also in the differ-
entiation of interest rates for the interest from the committment of resources
during the provision of credit.

The Amount of Credit

The amount of credit cannot be arbitrary. It must be bearable for both (all)
partners, who, as independently balancing economies, judge it on the basis
of their own interests. The lending state evaluates it with a view to the
effects of a long-term removal of resources. The investing state must pay
attention to the effects of the acceptance of resources. These effects must

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be absorbed in both states without an overloading of the central sources of redistribution. Failure to satisfy this requirement could evoke a disproportion connected with a strengthening of inflationary pressures. This applies for both states.

The lending state has an interest that the overall effects of the provision of credit correspond, at the end of the repayment, to the situation, had the evidential amounts of credit been invested at home. This, however, does not mean that they must be identical. Because it does not invest this amount, the necessity ceases of its having to cover the noninvestment needs of the khozraschet sphere and those social expenses dependent on the volume of production. It need not, therefore, realize from the contribution of the credit the same net income as in the case of domestic investment. However, at the end of the repayment period, it ought to have at its disposition the same amount for investment needs. This is the amount $K_e q_a^n$, where q_a is the bearer of the compound interest computation for the interest rate p_a, and n is the period of repayment expressed in number of years.

Let us presume that the credit is repaid in yearly amounts equal to the annuities (that is, including averaged interest). The amount of annuity will be computed by

$$a = K_{nom} q^n (q-1/q^n-1)$$

where a is the annuity, and the expression

$$q^n(q-1/q^n-1) - U_{p;n}$$

is the amortizer for the agreed upon interest rate p and the period of repayment n.

The lending state can invest the annuities. The investment is gradual. We can interpret it as saving. In investment, after all, we count on a normative net income, but this is distributed, because one accrues shares in distribution. Toward the amount for covering investment needs, the lending state, at the end of the repayment period has saved

$$a(q_a^n - 1/q_a-1).$$

This is a different amount from $K_e q_a^n$. This difference should be compensated for by price concessions on delivery transactions. This concession should be continually invested by the borrowing state and thereby saved. The yearly price concession for the compensation of effects is computed from the equation

$$K_e q_a^n - a(q_a^n -1/q_a-1) + x(q_a^n-1/q_a-1)$$

from which

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$$x = K_e U_{p_a;n} - a = a_{p_{a;n}} - a_{p;n}$$

Because the provision of intergovernment credit usually follows an improvement of the structure of mutual trade, it is necessary to lower the demands for price concessions by the effects of this improvement. Considered in the effects is only an amount for the coverage of increases in basic funds and supplies, because these are distributed. Requests for price concessions, however, ought to be raised by a thus corrected amount of unfavorable effects.

We can summarize: so that the provision of credit not be inefficient for the lending state, there ought to be preferential delivery transactions for it in a yearly amount equalling the corrected difference of the annuities at the level of the evidential value of the credit and the interest rate of the desired increases of the basic funds and supplies, and at an agreed upon level. The difference of both annuities is corrected with regard to the effects of the change in the makeup of mutual deliveries.

Let us note that price concessions in delivery transactions need not always move at the expense of prices at the producing factory. Insofar as the credit project is supposed to lead to the replacement of some other resource, this concession can, in part or totally, consist of a lowering of the accompanying purchase costs. It is further necessary to consider the possibility that the credit might be repaid separately from interest payments. Similar cases may easily be cited in the form of annuities. It is, however, possible that during transmission circumstances bring about another interest rate than agreed upon. In the calculation of efficiency, it would be necessary to reckon with this new interest rate.

Conditions of the Advantageousness of Credit

An accepted investment credit certainly revives the reproduction process, but at the same time brings with it the concurrent tasks of the reproduction of the investment and the reproduction of the borrowed capital within the repayment period. (As a simplification, let us take the supposition that the repayment period equals the period of the amortization of the invest-ment. Because the amortization period ought to equal the moral lifetime of the investment, these periods ought not to be too different and this supposition therefore will not color our view). The concurrent tasks of both reproductions requires that a net income be realized which would cover:

--increases of basic funds and supplies necessary to the securing of smooth development;

--the nonproduction needs of the khozraschet sphere;

--social expenses;

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--agreed upon annuities;

--price concessions in delivery transactions to lending states.

The requirements for the creation of net income must be lowered on the investor's side by the favorable structural effects with which the acceptance of credit is connected, and this again in an adjusted amount covering investment needs. Unfavorable effects in the structural area understandably increase the requirements for net income. A mathematical expression:

$$D_{min} = Ik_d + a + V(C-N) - H$$

where I represents the total investment costs for the constructed factory,

V is the yearly volume of production of the factory,

C is the average price of a unit of the volume of production, which includes also price concessions for delivery transactions of the lending states (lowered by this concession)

N represents the actual costs of production and circulation of a unit of the volume of production,

H represents the structural effects, in an adjusted amount, on the side of the investor state.

Increases of basic funds and supplies, nonproduction needs of the khozraschet sphere and social expenses are covered by the normative efficiency expressed by the product Ik_d.

If net income does not reach the minimal necessary level, production has to be secured from redistribution. More would be distributed monetarily than was materially produced. Inflationary pressure would be evoked. (Matters would lead to inflationary pressure on the side of the lending state as well, if the requests for price concessions were not satisfied in the amount defined here). From the considerations concerning the efficiency of provided and accepted credits, we can conclude that there exists a marginal profitable amount of credit and that this amount depends on the accepted price of the deliveries for the lending partners. This, to be sure, stems from an equation for the minimal necessary net income achieved by a factory built with the help of investment credit, in which we shall introduce a small, permissible adjustment. The member V(C-N) we shall rewrite

$$V(C-N) = V_1C_1 + V_2C_2 - (V_1+V_2)N$$

because $V = V_1+V_2$ and $VC = V_1C_1 + V_2C_2$

where V_1C_1 is the yearly volume of deliveries for the lending states in an estimation for them in terms of acceptable prices compensating for the negative effects of the long term removal of resources,

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V_2C_2 is the yearly volume of deliveries for the remaining customers,

C_1 and C_2 are understood in terms of parity at the factory. Therefore, in the actual costs, N, are not included the costs of marketing beyond the extent of preparation for shipment and the loading of products on the means of transportation.

Then

$$a_{p;n} = V_1C_1 + V_2C_2 - (V_1+V_2)N + H - Ik_d$$

$$K_{nom} = a_{p;n}R_{p;n}$$

where $R_{p;n}$ is the supplier of compound interest computation for the interest rate p and the period of capitalization n. It has a numerical value the inverse of the value of the amortizer, that is

$$R_{p;n} = U_{p;n}^{-1}.$$

This solution has economic significance for positive, nonzero values of a. For negative values, the acceptance of credit is not economically profitable.

We can transfer the consideration of the profitability of the acceptance of credit to the area of production which can be delivered on the account of annuities, without the needs of the securing of the operation of the factory having to be covered from redistribution. The condition of independence from redistribution (above the extent of social consequences expressed in H) is fulfilled only when deliveries owing to annuities are within the framework of an increase in net income in comparison with the norm. In other words, when the actual costs of deliveries owing to annuities are covered by above-normal net income. The norm is the minimum. We can formulate this condition with the systematic equations

$$V_{11}N = (V_2+V_{12})(C-N) + H - Ik_d$$

$$V_{11} = V_{12} + V_2 = V$$

$$K_{nom} = C_{11}^t \cdot V_{11} \cdot R_{p;n}$$

where V_{11} is the volume of yearly production delivered owing to annuities,

V_{12} is the volume of yearly production delivered to the lending states against payment,

V_2 is the volume of yearly production for other consumers,

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C   is the selling price for a unit of the volume of product for
     deliveries outside the frame of annuities,

c_{11}^t is the selling price of a unit of the volume of product acceptable
     for the partners who have provided credit,

$V_{11} \cdot c_{11}^t$ is the annuity.

For the acceptibility of the price of deliveries in the framework of
annuities, from the viewpoint of the interests of the lending state,
applies:

$$V_{11} \cdot [C - c_{11}^t + P)] = a_{p_a;n} - a_{p;n} - B$$

where C is the actual price prepaid freight processing factory) given delivery
     from the represented source,

     P represents auxiliary actual costs, given deliveries from a factory
     built with the help of credit,

     B represents effects of a change of structure in the lending state in
     an amount covering increases of basic funds and supplies (unfavorable
     effects are included).

Between both conceptions of the expression of the acceptability of credit
exists the connection:

$$V_1 C_1 = V_{11} \cdot c_{11}^t + V_{12} \cdot C_2$$

$$V_{11} + V_{12} = V_1$$

From these considerations it also follows that price concessions do not have
to move only at the expense of the factory price. They can rest in part (or
even totally) on a lowering of incidental actual costs, compared to deliveries
from the represented source.

Credit and Prices

We have concluded that an acceptable amount of credit depends on acceptable
prices. Thus prices have extraordinary significance. It is necessary to
elucidate what they ought to be, because contractual responsibilities last·
a specific, limited time. During their validity, the prices of deliveries
have to satisfy the partners. However, at the same time these change, and
along with them change the conditions of the efficiency of a factory built
with the help of credit. Three questions therefore arise:

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1) Should the partners agree on delivery prices over the long or the short term?

2) Should fixed, or flexible, prices be negotiated?

3) What should their relation be to world prices?

The first question must be understood more widely than the establishment of concrete prices. It is a question of the principles according to which prices will be formed during the period of validity of contractual relations. It is a needed economic pressure against the stagnation of factory production on the qualitative side and for the stimulation of the growth of the technical level of products during this period.

The construction of the factory itself is not a short-term matter. The length of time needed for it depends on conditions and on the character of the undertaking. It can even be longer than 10 years. The period of projected operation is at least 15 years long. It is therefore necessary that the partners be clear, over the long term, concerning the smaller questions which influence efficiency from their positions and the viewpoint of their interests. It is impossible to project only the effect of factors influencing current development into long-term consideration. It is necessary to estimate development as well over a longer period. Therefore, price negotiations should in principle be long-term. They should keep in mind possible risks and technological development, both from the side of the production process and on the side of the product and its use. At the same time, it is necessary to take note of the general tendency of the development of prices.

For these reasons, it is impossible to request in good faith that specific prices be negotiated over the long term, but only the principles which will be applied in setting prices during the validity of the contractual relation. This means that at the most the price function according to which prices will be created, could be negotiated. At the same time, however, the conditions of its validity must be outlined. Price negotiations, then, should be long term, but negotiated prices must be dynamically flexible and respect development trends. This is the fundamental answer to the first two questions.

The answer to the third question stems, basically, from the answers to the first two questions. Under development trends which should be respected are considered trends in the development of world prices. There ought to develop, however, an effort to purge the undesirable elements of the development of world prices from negotiated prices. The price should be such that it not be advantageous for either partner, during the validity of the contractual relations, to break the agreement. At the same time, conditions of the efficiency of the credit relation must be integrated into the negotiated prices. If this does not happen, there would arise on one or the other side a situation whose resolution would depend on redistribution.

It would evoke inflationary pressure, not covered financially by the drawing down of material resources, which would have a more long-term character.

This short discussion of the problem of prices undoubtedly argues for new elements in the views on the price of individual products and their desired dependence on usefulness. If this dependence is not incorporated into prices, space cannot be created within their framework for the coverage of excess costs connected with the acceptance of credit (the concurrent tasks of the reproduction of investment with the reproduction of borrowed capital without disturbing the interests of the participating states or at least one of them).

Sources of the Financing of Credit

It is desirable to add to these considerations a remark concerning the sources of financing of the provided credits from the side of the lending state. The basic source, is naturally, accumulation. This is not, however, the sole source. Along with it, it is necessary to remember a source which is created within the framework of the economy, as a result of a shift of its structure, and whose mobilization it is possible to fully calculate. This is the lowering of the complex national economic capital intensiveness, which has been evoked by a shift of the structure in the direction of less capital-intensive branches and which will take place given the provision of credit for the capital-intensive branches of basic industry.

Thus, at least in the near future, we will be granting oriented credits, because they will have as the main goal the securing of the delivery of raw materials for our industry. As a result of this shift of structure, it would be possible to shift resources earmarked for the development of capital intensive branches, which will be limited, to the support of the provided credit. At the same time, however, it will be necessary to keep in mind the capital securing of the production of goods for the export equivalent toward covering deliveries above the framework of annuities. This production must be guaranteed along the whole vertical social production process, beginning with the supplying of initial raw materials and materials.

Summary

When we summarize the remarks contained in the preceding parts of this article, we reach the conclusion that the effects and economic efficiency of long-term investment credits are different on the side of individual partners, who work under different conditions and are motivated differently. Credits should help them resolve different problems. Nevertheless, we have seen that effects are mutually conditioned.

On the foundation of this commentary, we can construct a scheme for the calculation of economic efficiency:

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a) the providing of credit:

agreed upon annuity

+ price concessions on yearly deliveries

+ increase (- decrease) of the creation of net income on a social scale,
  evoked by a shift of structure, and this in an amount covering increases
  of basic funds and supplies

- annuity at the level of the real costs of providing credit (the evidential
  value of credit) and an interest rate covering increases of basic funds
  and supplies

= yearly effects in the area of net income (+favorable, -unfavorable)
  X supplier $R_{P_a;n}$

= efficiency of provision of credit (+ efficient, - inefficient)

b) acceptance of credit:

overall net income realized by the factory through deliveries to the lending
states;

+ through deliveries to remaining clients

+ increase (- decrease) of creation of net income on a social scale, evoked
  by a shift of structure, and this in the amount of coverage of increases
  of basic funds and supplies

- normative net income of factory

- agreed upon annuity

= effects in the area of net income (+favorable, -unfavorable)

X supplier $R_{P_a;n}$

= efficiency of acceptance of credit (+efficiency, - inefficiency)

In addition it is necessary to note: the investing state, after the repayment
period of the credit has elapsed, gains the amount of the accepted credit
including interest payments (both are included in the saved amount of that

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portion of net income which is earmarked for the coverage of increases in basic funds and supplies and which, when invested, produces additional net income), in order that a broadened production of the whole investment be guaranteed. However, it is not possible to evaluate this amount as the efficiency of the acceptance of credit. It is the efficiency of an investment, financed through credit. Efficiency of the acceptance of credit is the efficiency of the means of financing.

It would scarcely be possible to speak of the efficiency of the acceptance of credit, if the responsibility for its repayment has to be covered through redistribution (beyond the extent of the positive effects of structural shifts in the amount of satisfaction of investment needs). Such a method of repayment would draw down material resources and weaken the economy. It would be necessary to secure the expanded reproduction of the investment at least in part with the help of additional credit. It is, therefore, necessary to differentiate between the efficiency of an investment and the efficiency of the method of its financing.

It is clear that financing by means of credit can effectively contribute to a balancing of the level of economies, through the orientation of concentrated resources at the most efficiently mobilizable sources, without the interruption of the individual interests of the lending states given the current deepening of the international division of labor, specialization and cooperation. After all, the idea of providing investment credits is the improvement of the structure of the economy of the lending state by means of an improvement of the makeup of its imports and exports. And the balancing of levels of economies can be most effective precisely when weaker economies will gain while stronger ones do not lose. The weakening of the stronger economies would limit the resources for the balancing of levels.

In addition to the securing of material resources, and concurrently with it, international investment credit, it seems that such credit ought, therefore, to develop above all in this direction, within the framework of socialist economic integration. It would thus become a very successful instrument for the strengthening of integrative relations.

Example of Computation of Efficiency of Credit

An example of the computation of the efficiency of international investment credit: State A provides state B a credit for 12 years at 2 percent interest. The provision has a material form. The real costs of the provision (the evidential value) of credit amounts to Kcs 1.25 billion, the agreed upon amount (the nominal value) has been established at Kcs 1 billion. The interyear increase of investment needs amounts in both states to 6 percent. Through providing credit, state A secures yearly deliveries of 2 million tons of iron ore concentrate.

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The noninvesting state substitutes the supplier's resources without additional effects on the economy in the area of structure for a price concession on deliveries of Kcs 30 per ton.

The investing state, B, advantageously changes the structure of exports. It can limit less efficient production, which to date it had been forced to export, and replace it with the production of a factory built with the help of credit. The factory, in part, covers its needs as well. The investing state complements the credit with its own resources and builds the factory at a cost of Kcs 2.5 billion. Yearly production should total 6 million tons of concentrate. It sells the production to the lending state for Kcs 380 per ton and to the remaining customers for Kcs 395 per ton. The norm of efficiency amounts to 20 percent, of which 30 percent is assigned to investment needs, so that the percentage p_a reaches, as stated above, 6. The change in the structure of exports brings in yearly Kcs 25 million (after distribution, that is 30 percent of the gross amount). The actual costs of 1 ton of concentrate, prepaid freight the lender's processing plant, amount to: Kcs 540, given deliveries from elsewhere, and Kcs 510 given deliveries from the factory built with the help of credit. At the same time, its own costs of production and marketing per ton of product amount to Kcs 290. The numerical values of the suppliers (R) and amortizers (U) for 12 years amount to:

2 percent U = 0.09455960; R = 10.575341

6 percent U = 0.11927703; R = 8.383844

Annuities $a_{6;12}$ = Kcs 149,096,000, $a_{2;12}$ = Kcs 94,560,000

The annuity for 6 percent is calculated on the basis of the evidential value of credit.

Economic efficiency of provision of credit:

agreed upon annuity	Kcs 94.56 million
+ price concessions on deliveries (2 million tons at Kcs 30)	+Kcs 60 million
- annuity on basis of real costs of providing credit	-Kcs 149.069 million
yearly contributions from providing credit	Kcs 5.464 million
economic efficiency of provision of credit (5.464 X $R_{6;12}$)	Kcs 45.808 million

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Economic efficiency of acceptance of credit:

net income from deliveries:

to lending country (2 million tons at Kcs 90)	Kcs 180 million
to remaining countries (4 million tons at Kcs 105)	Kcs 420 million
+ contribution of change in makeup of exports $X p_{inv}$	Kcs 25 million
- normal net income (20 percent of Kcs 2.5 billion)	Kcs 500 million
- agreed upon annuity	Kcs 94.56 million
yearly contributions from acceptance of credit	Kcs 30.44 million
economic efficiency of acceptance of credit (30.440 $X R_{6;12}$)	Kcs 255.204 million

Both the provision and the acceptance of the credit is, in the example, efficient.

From the example, we can read the difference between the efficiency of the investment and the efficiency of the acceptance of credit. For the credit to be efficient for the investor, the investment must secure, in addition to a normal net income, the repayment of the credit including interest payments, that is, on a yearly scale the payment of the annuity, lessened by incidental, favorable effects. Here it is a matter of Kcs (94.56-25.0) million, that is of Kcs 69.56 million yearly. This amount, capitalized by $R_{6;12}$, gives Ksc 583 million. The requirement for efficiency is increased, that is, by Kcs 583 million. In our example, the efficiency of the investment reaches 583 + 255 = Kcs 838 million, but the efficiency of the acceptance of credit only Kcs 255 million.

We can also demonstrate the calculation of the marginal amount of credit:

$$290x = y(395-290) + (25 \times 10^6) - (500 \times 10^6)$$

$$x + y = 6 \times 10^6$$

$$x = 392,440 \text{ tons}; \quad y = 5,607,560 \text{ tons}.$$

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The factory built with the help of credit can, owing to annuities, deliver yearly 392,440 tons of concentrate, i.e., roughly 6.5 percent of its production.

Profitable actual price for lending state:

$$540 - (149.096 \times 10^6 - 94.56 \times 10^6)/2 \times 10^6 = \text{Kcs } 512.73 \text{ per ton.}$$

Breakdown of profitable price:

$$512.73 = [392,440x + (1,607,560)(540)]/2 \times 10^6$$

x = Kcs 400.10, prepaid freight processing plant, i.e., given parity at the factory of producer, 400.10 - 130 = Kcs 270.10 (Kcs 130 are incidental actual costs.)

Profitable amount of credit: $(270.00)(392,440)R_{2;12}$ = Kcs 1,121,000,000.

It is natural that the investing state does not know in detail the relations and conditions of the lending state. It must, however, sensitively estimate them.

The article submitted here attempts a view of the economic efficiency of international investment credits as well as the efficiency of the method of investment finance, from the viewpoint of the production sphere. It takes into account the differing interests of the participating states. Therefore it investigates the separate effects on the side of the lending states and on the side of the investor state. It reaches the conclusion that there exists a marginal profitable amount of credit. This amount depends on prices, which have great importance in credits. International investment credits, that is, can be an effective instrument as well in the balancing of the levels of economies, without weakening the stronger economies. The article presents a partial view and does not pretend to definitiveness of viewpoint.

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CZECHOSLOVAKIA

COMPUTER NOMENCLATURE, INCREASE BY TYPE PRESENTED

JSEP, SMEP Equipment and Its Uses

Prague PODNIKOVA ORGANIZACE in Czech No 6, 1979 pp 277-278

[Excerpts] The exhibition "JSEP and SMEP Equipment and Its Uses" will be held
in Moscow between 14 June and 15 July 1979.

The year 1969 marked an important milestone in the development of computer
engineering, which is a relatively young field. In that year, the "Agreement
on Cooperation Between Socialist Countries in Computer Engineering" was signed,
putting an end to separate, frequently unsystematic and chaotic, development in
this important economic sector by the various states and laying the foundation
for realistic and effective cooperation under the leadership of an international
commission. In the 10 years since the founding of the International Commission
of Socialist States for Computer Engineering, progress in socialist integration
has led to many important successes in computer engineering in the socialist
countries. The research on and development of the third-generation series of
JSEP [Unified System of Electronic Computers] computers was completed in 1973,
and in the same year an exhibition of the Unified Series of Electronic Computers,
"Moskva 1973," was held in Moscow, documenting the successes achieved by the
individual countries in third-generation computer technology.

While the third-generation computers have been gradually incorporated and have
been successfully serving numerous users, research and development workers of
the socialist countries have continued work on a higher-generation series of
computers, called the JSEP 2. At the same time, cooperation between socialist
countries has been expanded to the System of Small Electronic Computers [SMEP];
in view of the increasing number of computers in use, international agencies
which monitor and assure the effective use of computer technology have gained
increased importance.

The Czechoslovak exhibits can be divided into hardware and software on one hand
and illustrations of the utilization of computer facilities on the other.

The main exhibit in the Czechoslovak section at the Moscow exhibition will be
the ES-1025 computer system, laid out in the main hall in the following con-
figuration:

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The ES 2025--the basic unit, which has, besides its own modules:

        the ES 5074 floppy disk memory,
        the ES 0101 contactless alphanumeric keyboard,
        the ES 7934 operator's printer unit,
        the 79 MI operator's display;

    the ES 5004 magnetic tape unit;

    the ES 5066 Soviet-produced magnetic disk memory (2 100-Mbyte units);

    the ES 6016 fast punched-card reader (2 units);

    the ES 7034 alphanumeric drum printer;

    the ES 7039 chain printer;

    the ES 5075 floppy disk I/O unit.

The ES 1025 computer system may include the following reception units:

    the ES 9080 punched-card receiver;

    the ES 9111 dual floppy disk drive.

Other Czechoslovak-produced hardware at the Moscow exhibition is described below.

The SM 3-20P Minicomputer:

    the SM 2301 processor for the SM 3-20P;

    the SM 3103 ferrite core storage unit;

    the SM 1012 system interface unit;

    the SM 6002 universal IRPS controller (2 units);

    the SM 6001 universal IRPR controller (3 units);

    the SM 8105 null modem;

    the SM 5105 disk control unit;

    the SM 5403 disk pack unit [kazetovy disk];

    the SM 5605 floppy disk internal storage unit;

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the SM 6208 punched tape reader;

the SM 7202 1920-character display;

the SM 7108 matrix printer with keyboard.

The SM 4-20 Minicomputer:

the SM 2302 processor for the SM 4-20P, including semiconductor internal memory;

the SM 0102 system interface unit;

the SM 6002 universal IRPS controller (4 units);

the SM 6001 universal IRPR controller;

the SM 2001 programmable timer;

the SM 5105 disk control unit;

the SM 5403 disk pack unit (2 units);

the SM 7202 1920-character display (4 units);

the SM 7108 matrix printer with keyboard.

The ES 7907 complex for graphic input and output:

a graphic information input unit;

a plotting unit.

The KA 10 system for data acquisition and preparation:

the 3010 processor;

the 3011 operator's console;

the 3030 acquisition station;

the 3032 input unit;

the 3033 input unit (2 units);

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the 3020 printer;

the 3036 printer;

the 3035 display unit;

the 3034 token recorder.

The ZKD 201 circuit board tester:

test frame;

control unit;

the ES 5069 disk pack unit;

the ES 5569 disk drive control unit;

the ES 7186 matrix printer;

the ES 7186 display;

the ADT 4500 minicomputer.

In this article we will not go into further detail regarding the hardware in
the Czechoslovak section of the exhibit, since it has been described in other
articles. Instead we will focus on some exhibits of the systems application
of computer hardware.

The use of computers in the CSSR in a system for monitoring plan fulfillment
is shown in the "nationwide" section of the exhibit through diagrams and slides.
The exhibitors are Czechoslovak organizations of the Computer Equipment Enter-
prose (PVT), which is providing information on automating the national electoral
system.

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Growth of Computers by Type

Prague HOSPODARSKE NOVINY in Czech 13 Jul 79 p 2

[Text] At the end of last year the following were on record in the national
economy: 1194 digital computers, 211 punched-card computers [electronic account-
ing equipment], 454 minicomputers, 161 control computers, 7 hybrid computer sys-
tems, 432 analog computers and 679 sets of punched card machines. The Unified
System of Electronic Computers accounted for 30.4 percent of all digital com-
puters at year's end. Last year total computer assets increased by 2,777.7

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million korunas, or 20.9 percent above the figure for 31 December 1977. Total assets as of the end of the year amounted to 16 billion korunas, or 1,057 korunas per capita.
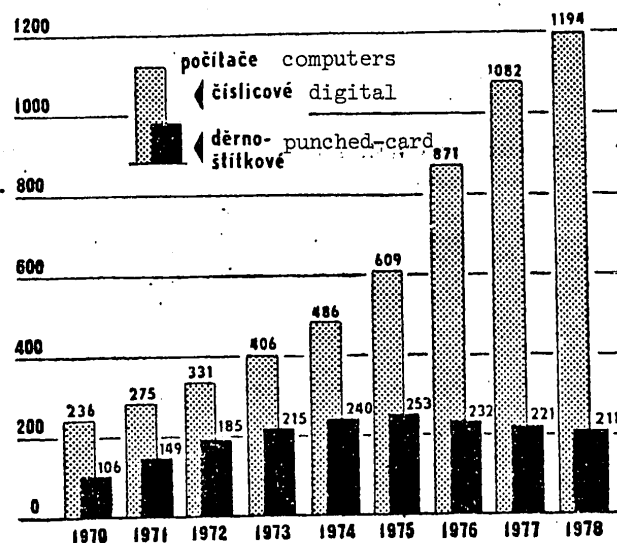
Number of Digital and Punched-Card Computers, 1970-1978.

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POLAND

BRIEFS

IL-86 COMPONENTS--The FINANCIAL TIMES reports that Polish industry is going to play an important role in IL-86 serial production. The Mielec and Swidnik Plants of the Polish Aviation Works have begun the manufacture of slats, flaps and ailerons for this type of aircraft but as of next year will deliver more important sub-assemblies, namely IL-86 wings (ailes). In return for this participation of the Polish aeronautical industry, LOT will receive the IL-86 when serial production begins. [Text] [Paris AIR & COSMOS in French 1 Sep 79 p 10]

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